Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A control method in a thermal system containing [[~~a~~]]an obstruction-curved and thick-walled component through which a medium flows, the method which comprises:

detecting ~~wall temperatures~~ a temperature difference between the middle wall temperature and the internal wall temperature of the component;

determining a heat flux density of a heat flux from the medium into a wall of the component;

determining a respective heat transmission coefficient between the medium flowing through the component and the wall of the component from the ~~wall temperatures~~ temperature difference between the middle wall temperature and the internal wall temperature and the heat flux density; and

~~determining a heat transmission coefficient and~~ using the heat transmission coefficient to influence properties of the medium, and thereby taking into account heat stresses in the component.

Claim 2 (original): The method according to claim 1, which comprises implementing the process steps in a closed-loop control method for regulating the thermal system.

Claim 3 (original): The method according to claim 1, which comprises implementing the process steps in an open-loop control method for regulating the thermal system.

Claim 4 (canceled)

Claim 5 (original): The method according to claim 1, wherein the step of determining the heat transmission coefficient comprises measuring the wall temperatures of the component at an inside of the wall and substantially in a center of the wall of the component, and determining the heat flux density from the medium into the wall from the wall temperatures.

Claim 6 (original): The method according to claim 1, which comprises determining the heat flux density from the medium into the wall of the component by calculating

$$q = \frac{\lambda(T_m - T_i)}{r_i\left[\left(\frac{r_o^2}{r_o^2 - r_i^2}\right)^2 \ln\frac{r_o}{r_i} - \frac{3r_o^2 - r_i^2}{4(r_o^2 - r_i^2)}\right]},$$

where is a temperature difference between the wall temperature substantially at a center of the wall and a wall temperature

at an inner part of the wall of the component, λ is the thermal conductivity, r_i is an inner radius and r_o is an outer radius of the wall of the component.

Claim 7 (original): The method according to claim 1, which comprises determining the heat transmission coefficient from:

$$\alpha = \frac{q}{T_s - T_i},$$

where T_s is a temperature of the heat flux from the medium into the wall of the component, T_i is a wall temperature at an inner wall surface of the component, and q is the heat flux density.

Claim 8 (original): The method according to claim 1, wherein the component is a component part of a power station, and the heat transmission coefficient changing with the varying medium properties is adapted to a profile of a load change in the power station.

Claim 9 (original): The method according to claim 8, which comprises including in the properties of the medium a temperature, a mass flow, and a pressure from the medium into the wall of the component.

Claim 10 (original): The method according to claim 1, which comprises, taking into account a temperature difference between a measured internal wall temperature and a real temperature on an inner wall of the component, integrating an analytically known temperature profile in the wall of the component into the step of determining the heat transmission coefficient.

Claim 11 (withdrawn): In combination with a thermal system containing a component conducting a flow of a medium, a process control device, comprising:

a subordinate control loop configured to process a conventional closed-loop control;

an optimizer/desired-value generator connected on an input side of said subordinate control loop, and a feedback for inputting into said optimizer/desired-value generator an output variable fed back from the real process, and process variables transmitted from the thermal system to the process;

said optimizer/desired-value generator determining optimized desired-value profiles for said subordinate control loop from stipulated efficiency criteria, from the output variable, and from the process variables.

Claim 12 (withdrawn): The device according to claim 11, wherein said optimizer/desired-value generator is configured to derive pilot control for said subordinate control loop from the optimized desired-value profiles.

Claim 13 (withdrawn): The device according to claim 11, wherein said optimizer/desired-value generator is configured to output actuating values for controlling thermal load changes in the thermal system and is connected to feed the actuating values directly to the process.

Claim 14 (original): A process-control device, comprising interconnected control and closed-loop control modules configured to carry out the method according to claim 1.

Claim 15 (new): A control method in a thermal system containing an obstruction-curved and thick-walled component part of a power station, through which a medium flows, the method which comprises:

detecting a temperature difference between the middle wall temperature and the internal wall temperature of the component;

determining a heat flux density of a heat flux from the medium into a wall of the component;

determining a respective heat transmission coefficient between the medium flowing through the component and the wall of the component from the temperature difference between the middle wall temperature and the internal wall temperature and the heat flux density; and

using the heat transmission coefficient to influence properties of the medium in a controlled manner according to an efficiency criterion and to maintain permissible heat stresses; and

adapting the heat transmission coefficient changing with the varying medium properties to a profile of a load change in the power station.